

Sequence Listing

<110> NEXGEN BIOTECHNOLOGIES, INC.

<120> Production of Transformed Plants Expressing Thyroid Stimulating Hormone Receptor

<150> KR2002-38064

<151> 2002-07-02

<160> 2

<170> KopatentIn 1.71

<210> 1

<211> 2292

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1) .. (2289)

<400> 1

atg agg ccg gcg gac ttg ctg cag ctg gtg ctg ctg ctc gac ctg ccc 48

Met Arg Pro Ala Asp Leu Leu Gln Leu Val Leu Leu Leu Asp Leu Pro

1 5 10 15

agg gac ctg ggc gga atg ggg tgt tcg tct cca ccc tgc gag tgc cat 96

Arg Asp Leu Gly Gly Met Gly Cys Ser Ser Pro Pro Cys Glu Cys His

20 25 30

cag gag gag gac ttc aga gtc acc tgc aag gat att caa cgc atc ccc 144

Gln Glu Glu Asp Phe Arg Val Thr Cys Lys Asp Ile Gln Arg Ile Pro

35 40 45

agc tta ccg ccc agt acg cag act ctg aag ctt att gag act cac ctg 192

Ser Leu Pro Pro Ser Thr Gln Thr Leu Lys Leu Ile Glu Thr His Leu

50 55 60

aga act att cca agt cat gca ttt tct aat ctg ccc aat att tcc aga 240

Arg Thr Ile Pro Ser His Ala Phe Ser Asn Leu Pro Asn Ile Ser Arg

Sequence Listing

65	70	75	80	
atc tac gta tct ata gat gtg act ctg cag cag ctg gaa tca cac tcc				288
Ile Tyr Val Ser Ile Asp Val Thr Leu Gln Gln Leu Glu Ser His Ser				
85	90	95		
ttc tac aat ttg agt aaa gtg act cac ata gaa att cgg aat acc agg				336
Phe Tyr Asn Leu Ser Lys Val Thr His Ile Glu Ile Arg Asn Thr Arg				
100	105	110		
aac tta act tac ata gac cct gat gcc ctc aaa gag ctc ccc ctc cta				384
Asn Leu Thr Tyr Ile Asp Pro Asp Ala Leu Lys Glu Leu Pro Leu Leu				
115	120	125		
aag tcc ttg gca ttt tca aac act gga ctt aaa atg ttc cct gac ctg				432
Lys Ser Leu Ala Phe Ser Asn Thr Gly Leu Lys Met Phe Pro Asp Leu				
130	135	140		
acc aaa gtt tat tcc act gat ata ttc ttt ata ctt gaa att aca gac				480
Thr Lys Val Tyr Ser Thr Asp Ile Phe Phe Ile Leu Glu Ile Thr Asp				
145	150	155	160	
aac cct tac atg acg tca atc cct gtg aat gct ttt cag gga cta tgc				528
Asn Pro Tyr Met Thr Ser Ile Pro Val Asn Ala Phe Gln Gly Leu Cys				
165	170	175		
aat gaa acc ttg aca ctg aag ctg tac aac aat ggc ttt act tca gtc				576
Asn Glu Thr Leu Thr Leu Lys Leu Tyr Asn Asn Gly Phe Thr Ser Val				
180	185	190		
caa gga tat gat ttc ttt ggg aca aag ctg gat gct gtt tac cta aac				624
Gln Gly Tyr Asp Phe Phe Gly Thr Lys Leu Asp Ala Val Tyr Leu Asn				
195	200	205		
aag aat aaa tac ctg aca gtt att gac aaa gat gca ttt gga gga gta				672
Lys Asn Lys Tyr Leu Thr Val Ile Asp Lys Asp Ala Phe Gly Gly Val				
210	215	220		
tac agt gga cca agc ttg ctg gac gtg tct caa acc agt gtc act gcc				720
Tyr Ser Gly Pro Ser Leu Leu Asp Val Ser Gln Thr Ser Val Thr Ala				

Sequence Listing

225	230	235	240	
ctt cca tcc aaa ggc ctg gag cac ctg aag gaa ctg ata gca aga aac				768
Leu Pro Ser Lys Gly Leu Glu His Leu Lys Glu Leu Ile Ala Arg Asn				
245	250	255		
agc tgg act ctt aag aaa ctt gca ctt tcc ttg agt ttc ctt cac ctc				816
Ser Trp Thr Leu Lys Lys Leu Ala Leu Ser Leu Ser Phe Leu His Leu				
260	265	270		
aca cgg gct gac ctt tct tac cca agc cac tgc tgt gct ttt aag aat				864
Thr Arg Ala Asp Leu Ser Tyr Pro Ser His Cys Cys Ala Phe Lys Asn				
275	280	285		
cag aag aaa atc aga gga atc ctt gag tcc ttg atg tgt aat gag agc				912
Gln Lys Lys Ile Arg Gly Ile Leu Glu Ser Leu Met Cys Asn Glu Ser				
290	295	300		
agt atc gag acg ttg cgc cag aga aaa tct gtg aat gcc ttg aat agc				960
Ser Ile Glu Thr Leu Arg Gln Arg Lys Ser Val Asn Ala Leu Asn Ser				
305	310	315	320	
ccc ctc cac cag gaa tat gaa gag aat ctg ggt gac agc att gtt ggg				1008
Pro Leu His Gln Glu Tyr Glu Glu Asn Leu Gly Asp Ser Ile Val Gly				
325	330	335		
tac aag gaa aag tcc aag ttc cag gat act cat aac aac gct cat tat				1056
Tyr Lys Glu Lys Ser Lys Phe Gln Asp Thr His Asn Asn Ala His Tyr				
340	345	350		
tac gtc ttc ttt gaa gaa caa gag gat gag atc att ggt ttt ggc cag				1104
Tyr Val Phe Phe Glu Glu Gln Glu Asp Glu Ile Ile Gly Phe Gly Gln				
355	360	365		
gag ctc aaa aac ccc cag gaa gag act cta caa gct ttt gac agc cat				1152
Glu Leu Lys Asn Pro Gln Glu Glu Thr Leu Gln Ala Phe Asp Ser His				
370	375	380		
tat gac tac acc ata tgt ggg gac agt gaa gac atg gtg tgt acc ccc				1200
Tyr Asp Tyr Thr Ile Cys Gly Asp Ser Glu Asp Met Val Cys Thr Pro				

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385	390	395	400	
aag tcc gat gag ttc aac ccg tgt gaa gac ata atg ggc tac aag ttc				1248
Lys Ser Asp Glu Phe Asn Pro Cys Glu Asp Ile Met Gly Tyr Lys Phe				
405	410	415		
ctg aga att gtg gtg tgg ttc gtt agt ctg ctg gct ctc ctg ggc aat				1296
Leu Arg Ile Val Val Trp Phe Val Ser Leu Leu Ala Leu Leu Gly Asn				
420	425	430		
gtc ttt gtc ctg ctt att ctc ctc acc agc cac tac aaa ctg aac gtc				1344
Val Phe Val Leu Leu Ile Leu Leu Thr Ser His Tyr Lys Leu Asn Val				
435	440	445		
ccc cgc ttt ctc atg tgc aac ctg gcc ttt gcg gat ttc tgc atg ggg				1392
Pro Arg Phe Leu Met Cys Asn Leu Ala Phe Ala Asp Phe Cys Met Gly				
450	455	460		
atg tac ctg ctc ctc atc gcc tct gta gac ctc tac act cac tct gag				1440
Met Tyr Leu Leu Leu Ile Ala Ser Val Asp Leu Tyr Thr His Ser Glu				
465	470	475	480	
tac tac aac cat gcc atc gac tgg cag aca ggc cct ggg tgc aac acg				1488
Tyr Tyr Asn His Ala Ile Asp Trp Gln Thr Gly Pro Gly Cys Asn Thr				
485	490	495		
gct ggt ttc ttc act gtc ttt gca agc gag tta tcg gtg tat acg ctg				1536
Ala Gly Phe Phe Thr Val Phe Ala Ser Glu Leu Ser Val Tyr Thr Leu				
500	505	510		
acg gtc atc acc ctg gag cgc tgg tat gcc atc acc ttc gcc atg gcc				1584
Thr Val Ile Thr Leu Glu Arg Trp Tyr Ala Ile Thr Phe Ala Met Ala				
515	520	525		
ctg gac cgg aag atc cgc ctc agg cac gca tgt gcc atc atg gtt ggg				1632
Leu Asp Arg Lys Ile Arg Leu Arg His Ala Cys Ala Ile Met Val Gly				
530	535	540		
ggc tgg gtt tgc tgc ttc ctt ctc gcc ctg ctt cct ttg gtg gga ata				1680
Gly Trp Val Cys Cys Phe Leu Leu Ala Leu Leu Pro Leu Val Gly Ile				

Sequence Listing

545	550	555	560	
agt agc tat gcc aaa gtc agt atc tgc ctg ccc atg gac acc gag acc				1728
Ser Ser Tyr Ala Lys Val Ser Ile Cys Leu Pro Met Asp Thr Glu Thr				
565	570	575		
cct ctt gct ctg gca tat att gtt ttt gtt ctg acg ctc aac ata gtt				1776
Pro Leu Ala Leu Ala Tyr Ile Val Phe Val Leu Thr Leu Asn Ile Val				
580	585	590		
gcc ttc gtc atc gtc tgc tgc tgt tat gtg aag atc tac atc aca gtc				1824
Ala Phe Val Ile Val Cys Cys Cys Tyr Val Lys Ile Tyr Ile Thr Val				
595	600	605		
cga aat ccg cac aac cca ggg gac aaa gat acc aaa att gcc aag agg				1872
Arg Asn Pro His Asn Pro Gly Asp Lys Asp Thr Lys Ile Ala Lys Arg				
610	615	620		
atg gct gtg ttg atc ttc acc gac ttc acg tgc atg gcc cca atc tca				1920
Met Ala Val Leu Ile Phe Thr Asp Phe Thr Cys Met Ala Pro Ile Ser				
625	630	635	640	
ttc tat gct gtg tca gca att ctg aac aag cct ctc atc act gtt agc				1968
Phe Tyr Ala Val Ser Ala Ile Leu Asn Lys Pro Leu Ile Thr Val Ser				
645	650	655		
aac tcc aaa atc ttg ctg gta ctc ttc tat cca att aac tcc tgt gcc				2016
Asn Ser Lys Ile Leu Leu Val Leu Phe Tyr Pro Ile Asn Ser Cys Ala				
660	665	670		
aat cca ttc ctc tat gct att ttc acc aag gcc ttc cag agg gat gtg				2064
Asn Pro Phe Leu Tyr Ala Ile Phe Thr Lys Ala Phe Gln Arg Asp Val				
675	680	685		
ttc atc cta ctc agc aag ttt ggc atc tgt aaa cgc cag gct cag gca				2112
Phe Ile Leu Leu Ser Lys Phe Gly Ile Cys Lys Arg Gln Ala Gln Ala				
690	695	700		
tac cgg ggg cag agg gtt cct cca aag aac agc act gat att cag gtt				2160
Tyr Arg Gly Gln Arg Val Pro Pro Lys Asn Ser Thr Asp Ile Gln Val				

Sequence Listing

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705                710                715                720

caa aag gtt acc cac gac atg agg cag ggt ctc cac aac atg gaa gat      2208
Gln Lys Val Thr His Asp Met Arg Gln Gly Leu His Asn Met Glu Asp
                725                730                735

gtc tat gaa ctg att gaa aac tcc cat cta acc cca aag aag caa ggc      2256
Val Tyr Glu Leu Ile Glu Asn Ser His Leu Thr Pro Lys Lys Gln Gly
                740                745                750

caa atc tca gaa gag tat atg caa acg gtt ttg          t aa      2292
Gln Ile Ser Glu Glu Tyr Met Gln Thr Val Leu
                755                760

<210>  2
<211>  763
<212>  PRT
<213>  Homo sapiens

<400>  2
Met Arg Pro Ala Asp Leu Leu Gln Leu Val Leu Leu Leu Asp Leu Pro
  1                5                10                15

Arg Asp Leu Gly Gly Met Gly Cys Ser Ser Pro Pro Cys Glu Cys His
                20                25                30

Gln Glu Glu Asp Phe Arg Val Thr Cys Lys Asp Ile Gln Arg Ile Pro
  35                40                45

Ser Leu Pro Pro Ser Thr Gln Thr Leu Lys Leu Ile Glu Thr His Leu
  50                55                60

Arg Thr Ile Pro Ser His Ala Phe Ser Asn Leu Pro Asn Ile Ser Arg
  65                70                75                80

Ile Tyr Val Ser Ile Asp Val Thr Leu Gln Gln Leu Glu Ser His Ser
                85                90                95

Phe Tyr Asn Leu Ser Lys Val Thr His Ile Glu Ile Arg Asn Thr Arg

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Sequence Listing

100	105	110
Asn Leu Thr Tyr Ile Asp Pro Asp Ala Leu Lys Glu Leu Pro Leu Leu		
115	120	125
Lys Ser Leu Ala Phe Ser Asn Thr Gly Leu Lys Met Phe Pro Asp Leu		
130	135	140
Thr Lys Val Tyr Ser Thr Asp Ile Phe Phe Ile Leu Glu Ile Thr Asp		
145	150	155
		160
Asn Pro Tyr Met Thr Ser Ile Pro Val Asn Ala Phe Gln Gly Leu Cys		
165	170	175
Asn Glu Thr Leu Thr Leu Lys Leu Tyr Asn Asn Gly Phe Thr Ser Val		
180	185	190
Gln Gly Tyr Asp Phe Phe Gly Thr Lys Leu Asp Ala Val Tyr Leu Asn		
195	200	205
Lys Asn Lys Tyr Leu Thr Val Ile Asp Lys Asp Ala Phe Gly Gly Val		
210	215	220
Tyr Ser Gly Pro Ser Leu Leu Asp Val Ser Gln Thr Ser Val Thr Ala		
225	230	235
		240
Leu Pro Ser Lys Gly Leu Glu His Leu Lys Glu Leu Ile Ala Arg Asn		
245	250	255
Ser Trp Thr Leu Lys Lys Leu Ala Leu Ser Leu Ser Phe Leu His Leu		
260	265	270
Thr Arg Ala Asp Leu Ser Tyr Pro Ser His Cys Cys Ala Phe Lys Asn		
275	280	285
Gln Lys Lys Ile Arg Gly Ile Leu Glu Ser Leu Met Cys Asn Glu Ser		
290	295	300
Ser Ile Glu Thr Leu Arg Gln Arg Lys Ser Val Asn Ala Leu Asn Ser		
305	310	315
		320

Sequence Listing

Pro Leu His Gln Glu Tyr Glu Glu Asn Leu Gly Asp Ser Ile Val Gly
 325 330 335

Tyr Lys Glu Lys Ser Lys Phe Gln Asp Thr His Asn Asn Ala His Tyr
 340 345 350

Tyr Val Phe Phe Glu Glu Gln Glu Asp Glu Ile Ile Gly Phe Gly Gln
 355 360 365

Glu Leu Lys Asn Pro Gln Glu Glu Thr Leu Gln Ala Phe Asp Ser His
 370 375 380

Tyr Asp Tyr Thr Ile Cys Gly Asp Ser Glu Asp Met Val Cys Thr Pro
 385 390 395 400

Lys Ser Asp Glu Phe Asn Pro Cys Glu Asp Ile Met Gly Tyr Lys Phe
 405 410 415

Leu Arg Ile Val Val Trp Phe Val Ser Leu Leu Ala Leu Leu Gly Asn
 420 425 430

Val Phe Val Leu Leu Ile Leu Leu Thr Ser His Tyr Lys Leu Asn Val
 435 440 445

Pro Arg Phe Leu Met Cys Asn Leu Ala Phe Ala Asp Phe Cys Met Gly
 450 455 460

Met Tyr Leu Leu Leu Ile Ala Ser Val Asp Leu Tyr Thr His Ser Glu
 465 470 475 480

Tyr Tyr Asn His Ala Ile Asp Trp Gln Thr Gly Pro Gly Cys Asn Thr
 485 490 495

Ala Gly Phe Phe Thr Val Phe Ala Ser Glu Leu Ser Val Tyr Thr Leu
 500 505 510

Thr Val Ile Thr Leu Glu Arg Trp Tyr Ala Ile Thr Phe Ala Met Ala
 515 520 525

Sequence Listing

Leu Asp Arg Lys Ile Arg Leu Arg His Ala Cys Ala Ile Met Val Gly
 530 535 540

Gly Trp Val Cys Cys Phe Leu Leu Ala Leu Leu Pro Leu Val Gly Ile
 545 550 555 560

Ser Ser Tyr Ala Lys Val Ser Ile Cys Leu Pro Met Asp Thr Glu Thr
 565 570 575

Pro Leu Ala Leu Ala Tyr Ile Val Phe Val Leu Thr Leu Asn Ile Val
 580 585 590

Ala Phe Val Ile Val Cys Cys Cys Tyr Val Lys Ile Tyr Ile Thr Val
 595 600 605

Arg Asn Pro His Asn Pro Gly Asp Lys Asp Thr Lys Ile Ala Lys Arg
 610 615 620

Met Ala Val Leu Ile Phe Thr Asp Phe Thr Cys Met Ala Pro Ile Ser
 625 630 635 640

Phe Tyr Ala Val Ser Ala Ile Leu Asn Lys Pro Leu Ile Thr Val Ser
 645 650 655

Asn Ser Lys Ile Leu Leu Val Leu Phe Tyr Pro Ile Asn Ser Cys Ala
 660 665 670

Asn Pro Phe Leu Tyr Ala Ile Phe Thr Lys Ala Phe Gln Arg Asp Val
 675 680 685

Phe Ile Leu Leu Ser Lys Phe Gly Ile Cys Lys Arg Gln Ala Gln Ala
 690 695 700

Tyr Arg Gly Gln Arg Val Pro Pro Lys Asn Ser Thr Asp Ile Gln Val
 705 710 715 720

Gln Lys Val Thr His Asp Met Arg Gln Gly Leu His Asn Met Glu Asp
 725 730 735

Val Tyr Glu Leu Ile Glu Asn Ser His Leu Thr Pro Lys Lys Gln Gly

Sequence Listing

740

745

750

Gln Ile Ser Glu Glu Tyr Met Gln Thr Val Leu

755

760